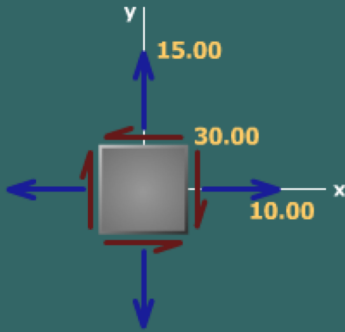


# M12.11 Mohr's circle game – plane stress

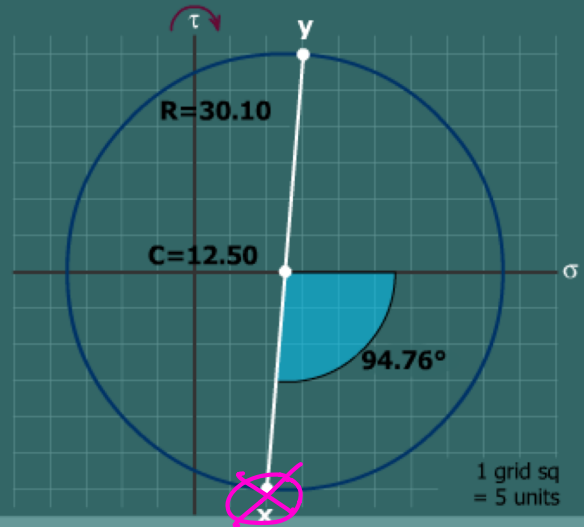
#1



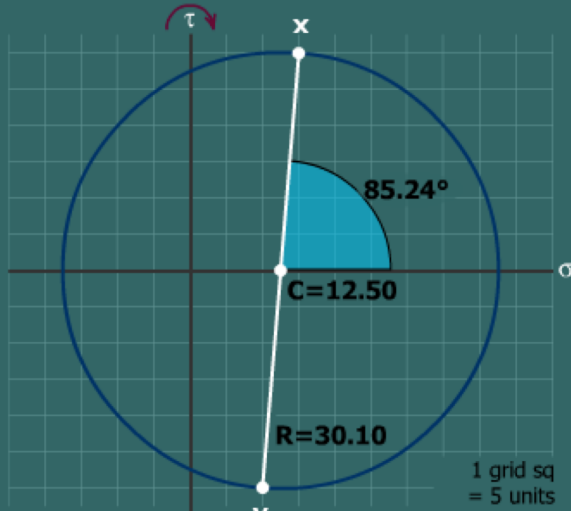
next

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

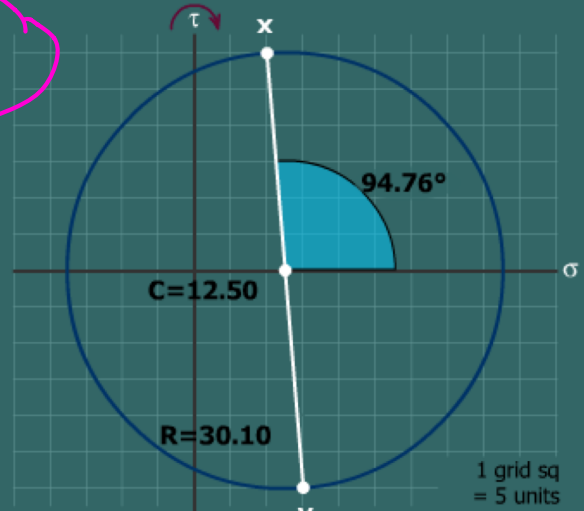
(a)



(b)



(c)



$$\sigma_{ave} = \frac{10 + 15}{2} = 12.5$$

$$R = \sqrt{\left(\frac{10 - 15}{2}\right)^2 + 30^2} = \sqrt{2.5^2 + 30^2} > \sigma_{ave}$$

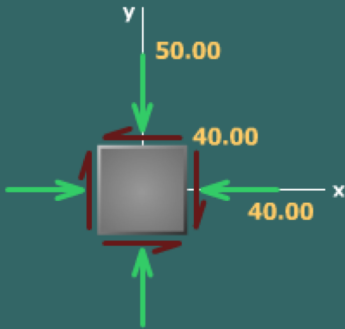
$$\sigma_{p1} > 0$$

$$\sigma_{p2} < 0$$

$$\xi \text{ x-axis} = (10, -30)$$

M12.11 Mohr's circle game - plane stress

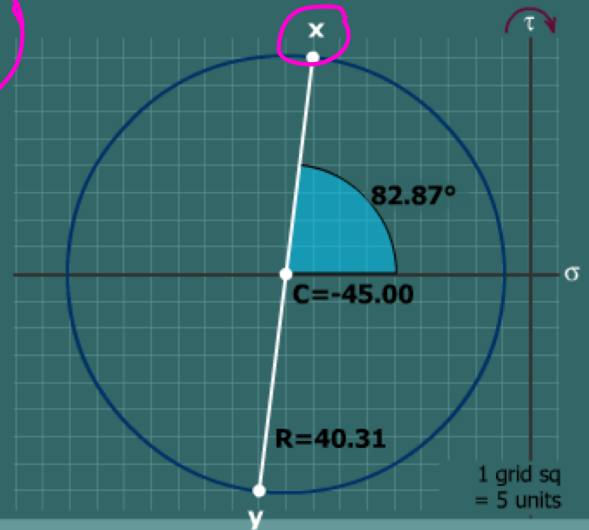
#2



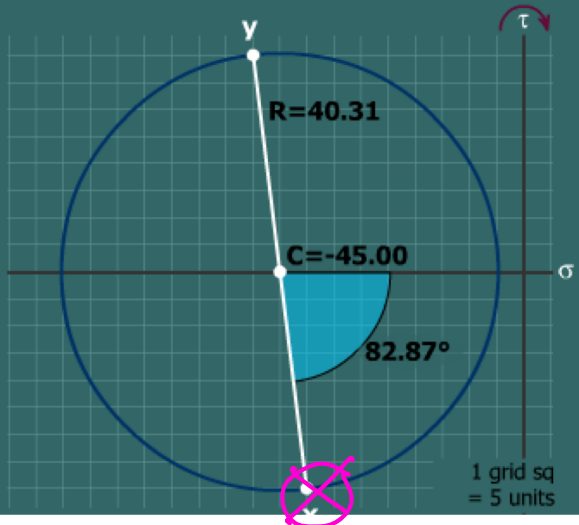
next

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

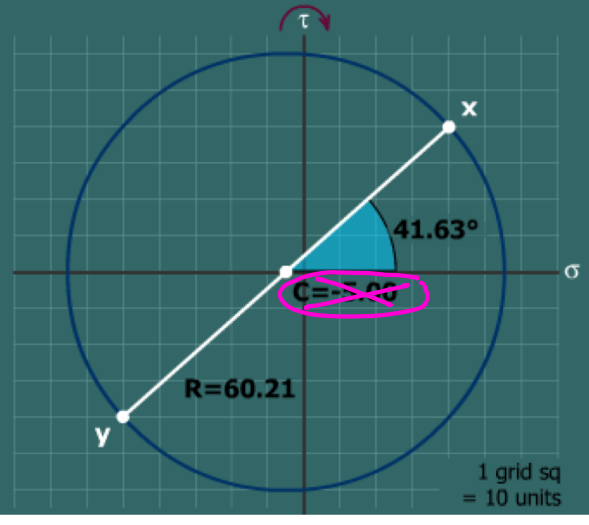
(a)



(b)



(c)



$$\sigma_{ave} = \frac{-40 - 50}{2} = -45$$

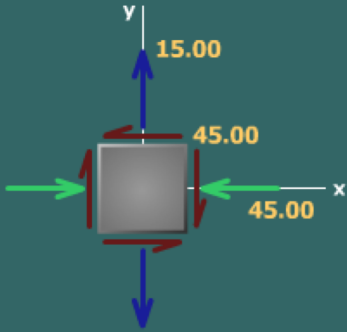
$$R = \sqrt{\left(\frac{-40 + 50}{2}\right)^2 + 40^2} = \sqrt{5^2 + 40^2} < |\sigma_{ave}|$$

$\sigma_{p1} < 0$   
 $\sigma_{p2} < 0$

$\xi$  x-axis = (-40, -40)

M12.11 Mohr's circle game – plane stress

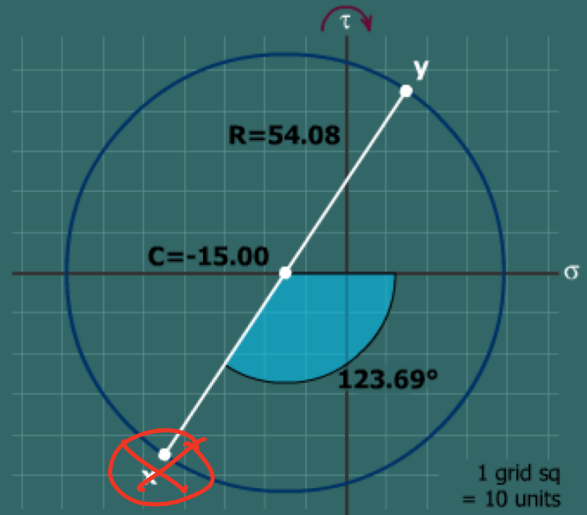
#3



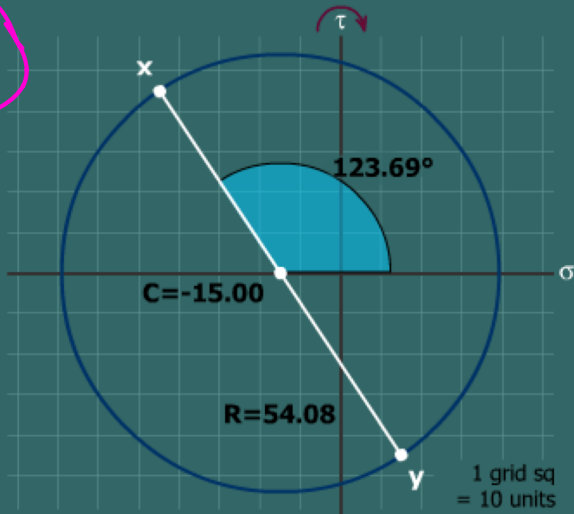
next

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

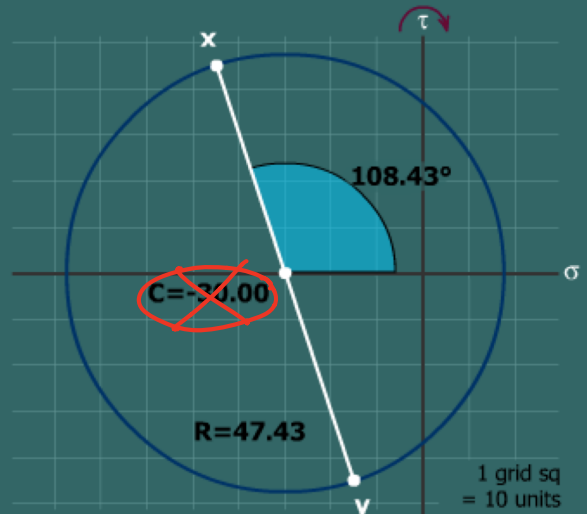
(a)



(b)



(c)



$$\sigma_{ave} = \frac{-45 + 15}{2} = -15$$

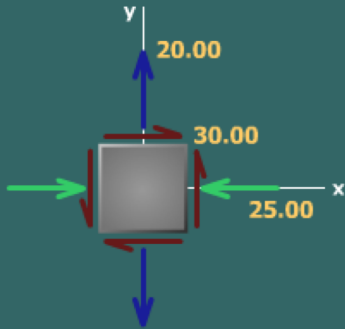
$$R = \sqrt{\left(\frac{-45 - 15}{2}\right)^2 + 45^2} = \sqrt{30^2 + 45^2} > |\sigma_{ave}|$$

$$\left. \begin{array}{l} \sigma_{p1} > 0 \\ \sigma_{p2} < 0 \end{array} \right\}$$

$$\hat{x} \text{-axis} = (-45, -45)$$

# M12.11 Mohr's circle game – plane stress

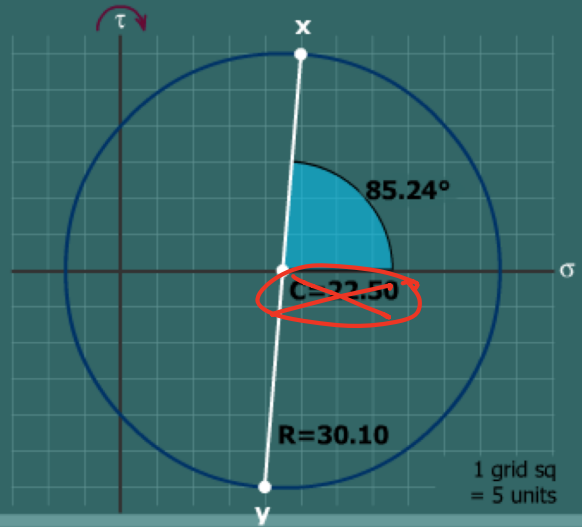
#4



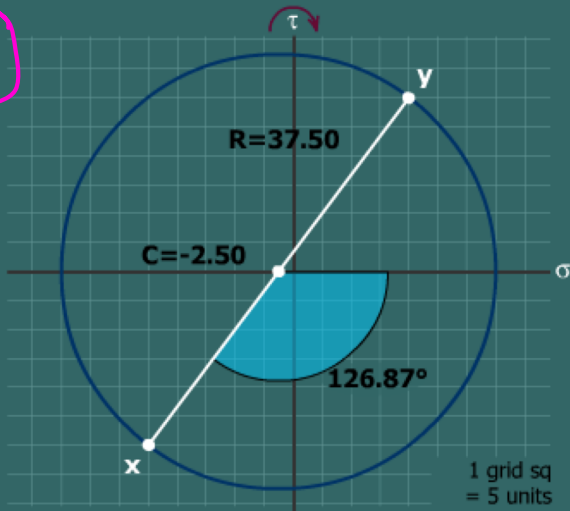
next

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

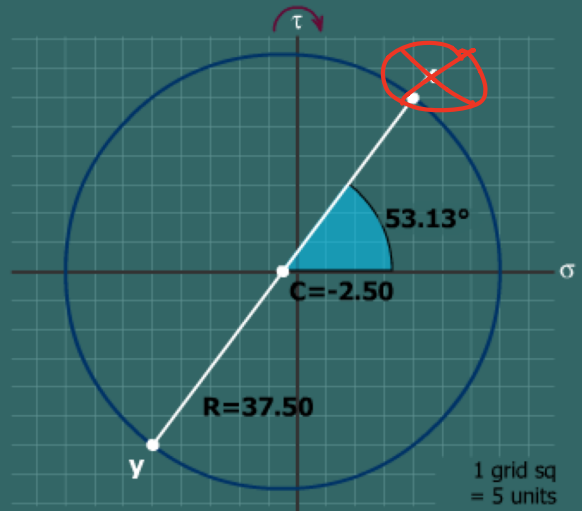
(a)



(b)



(c)



$$\sigma_{ave} = \frac{-25 + 20}{2} = -2.5$$

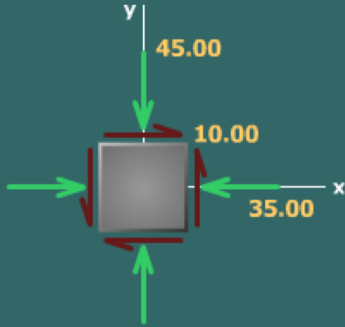
$$R = \sqrt{\left(\frac{-25 - 20}{2}\right)^2 + 30^2} = \sqrt{22.5^2 + 30^2} > |\sigma_{ave}|$$

$\left. \begin{array}{l} \sigma_{P1} > 0 \\ \sigma_{P2} < 0 \end{array} \right\}$

⚡ x-axis = (25, 30)

M12.11 Mohr's circle game – plane stress

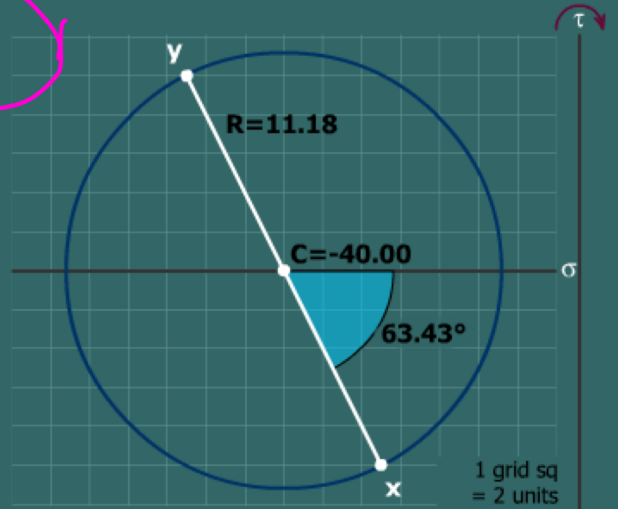
#5



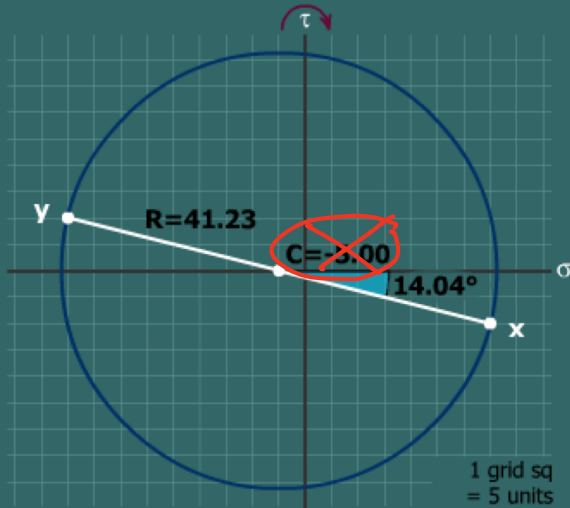
next

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

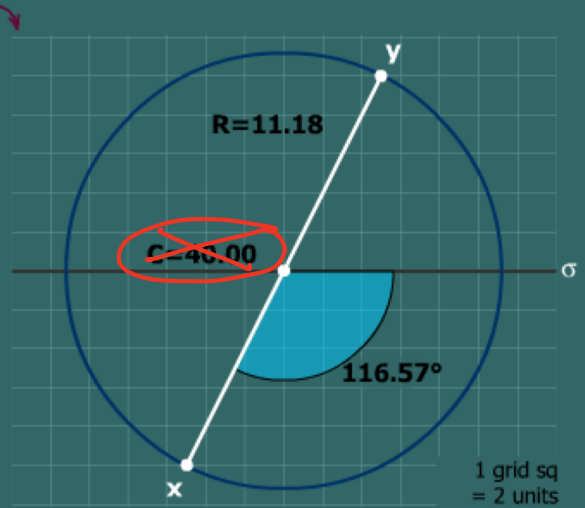
(a)



(b)



(c)



$$\sigma_{ave} = \frac{-35 - 45}{2} = -40$$

$$R = \sqrt{\left(\frac{-35 + 45}{2}\right)^2 + 10^2} = \sqrt{5^2 + 10^2} < |\sigma_{ave}|$$

$\sigma_{p1} < 0$   
 $\sigma_{p2} < 0$

$\xi$  x-axis = (-35, 10)